

REMARKS

By this amendment, claims 1, 2, 8, 9, 11, 15 and 19 have been amended. Currently, claims 1-9 and 11-51 are currently pending in the application, of which claims 5-7, 16-18 and 25-51 have been withdrawn from consideration. Accordingly, claims 1-4, 8, 9, 11-15 and 19-24 are active in this application, of which claims 1 and 9 are independent. The Office Action indicates that claims 8, 14 and 19 are objected to but allowable if presented in independent form.

In view of the above amendments and the following Remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Rejections Under 35 U.S.C. §103

Claims 1-4, 9, 11-13, 15 and 20-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 4,955,697 issued to Tsukada, *et al.* ("Tsukada") in view of U. S. Patent No. 5,877,830 issued to Shimada, *et al.* ("Shimada"). Applicant respectfully traverses this rejection for at least the following reasons.

Amended independent claim 1 recites "each pixel on a first row has an opening ratio different from that of each pixel on the rest of the rows". In this regard, the Examiner admitted "Tsukada does not explicitly disclose ... an opening ratio of each pixel at the first pixel row is different from the opening ratio of the pixels at the other rows ..." (Office Action, page 3).

Regarding this missing feature, the Examiner stated "Shimada teaches ... the pixel regions in a peripheral portion of the matrix arrangement has an aperture ratio lower than that of the pixel regions in other portions of the matrix arrangement ... " (Office Action, pages 3-4). Based upon this, the Examiner asserted "Shimada is evidence that ordinary workers ... would

find the reason, suggestion, or motivation to add an opening ratio of each pixel at the first pixel row is different from the opening ratio of the pixels at the other pixel rows ...” (Office Action, page 6). This assertion is respectfully disagreed with.

Shimada is directed to improving an opening ratio by using the gate lines and the data lines (not by black matrix) to cover the edges of a pixel electrode. This is achieved by forming gate lines, data lines and pixel electrodes such that the edges of each pixel electrode are overlapped by the adjoining gate lines and data lines, not by the black matrix.

For example, as shown in Fig. 1 and Fig. 3, the two horizontal edges of the pixel electrode 11 are overlapped by the gate lines 2, and the two vertical edge of the pixel electrode 11 are overlapped by the data lines 8. Thus, it is not necessary to form the black mask 13 to be extended to cover the edges of the pixel electrode 11. As clearly shown in Fig. 1, the black mask 13 is laterally spaced apart from the pixel electrode 11.

As the Examiner pointed out, Shimada discloses the black matrix overlapping the pixel electrodes on the first and last rows and the first and last columns (column 2, lines 29-42). This descriptive portion is directed to prior art, which suffers a restricted opening ratio problem in the pixels on the first and last rows and the first and last columns. Shimada is proposed to solve this problem by overlapping the edges of the pixel electrodes with the adjoining gates lines and data lines so that the black matrix doesn't have to extend to cover the edges.

However, Shimada does not disclose or suggest any reason to selectively reducing the opening ratio of the pixels on *the first row*, as claimed. Rather, as explained above, Shimada is directed to solving the restricted opening ratio problem of the pixels on the first and last rows and the first and last columns so that they have the same opening ratio as the other pixels. Thus, Shimada in fact teaches away from reducing the opening ratio of the pixels on any row.

For the reasons above, it is submitted that none of the cited references discloses or suggests the claimed feature of “each pixel on a first row has an opening ratio different from that of each pixel on the rest of the rows”. Also, Shimada fails to show any motivation to modify itself to do so. Thus, it is submitted that claim 1 is patentable over the cited references. Claims 2-4 that are dependent from claim 1 would be also patentable at least for the same reason.

Similarly, independent claim 9 recites “each pixel on the first row has an opening ratio different from that of each pixels on the rest of the rows”. As previously mentioned, this claimed feature is not disclosed or suggested in the cited references. Thus, it is submitted that claim 9 is patentable over the cited references. Claims 11-13, 15 and 20-24 that are dependent from claim 9 would be also patentable at least for the same reason.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-4, 9, 11-13, 15 and 20-24.

Other Matters

In this response, claims 1, 2, 8, 9, 11, 15 and 19 are amended for the purpose of informality correction and better wording. No amendment was made to overcome the applied prior art references because, as explained above, the cited references do not disclose or suggest the claimed invention.

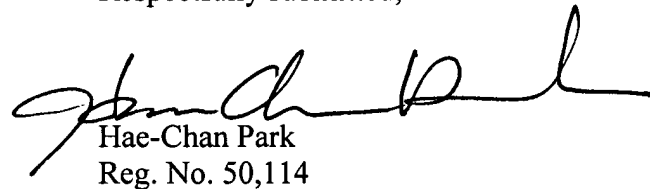
CONCLUSION

Applicant believes that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicant respectfully submits that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,



Hae-Chan Park
Reg. No. 50,114

Date: April 30, 2004

McGuireWoods LLP
1750 Tysons Boulevard
Suite 1800
McLean, VA 22102-4215
Tel: 703-712-5365
Fax: 703-712-5280
HCP:WSC/tmk